PART I. SUBJECT INDEX

Abramis brama recommended for introduction into Canadian waters, Borodin, N. A., 368.

Acipenser ruthenus recommended for introduction into Canadian waters, Borodin, N. A., 368.

Adirondack lakes, chemical characteristics, Faigenbaum, Harold M., 189-196.

Age of trout in relation to time of spawning, Dinsmore (disc.), 358-359.

Agersborg's trout food, excellent results with, 155-162.

Agriculture and aquiculture, Agersborg, H. P. Kjerschow, 266-269.

Alewife: see Pomolobus pseudoharengus.

Algae, factor in some hatchery mortalities, M'Gonigle, R. H., 416-422. influence on fluctuation of dissolved oxygen in fishponds, Wiebe, A. H., 181-188.

American Fisheries Society constitution and by-laws, as amended to date, 472-474.

membership, 475-494.

Anax junius larvae possible effective elimination by goldfish, Langlois (disc.), 138.

Anchor parasite (Lernaea carassii) infesting goldfish and carp, Tidd, Wilbur M., 176-180.

Angling, need for measure of catch, Clark, G. H., 49-53.

Aquatic insects in Waddell Creek riffles, their contribution by weight and numbers to available food supply, Needham, P. R., 245-246.

plants, dominating species in lakes Brome and Manitou, Quebec, Spier, J. D., 464-468.

plants in relation to oxygen supply and their bearing on fish life, Roach, Lee S., and Wickliff, E. L., 370-376.

vegetable organisms furnished with nutrient salts by flooding land areas,

Huntsman, A. G., 366-367.

Aquiculture and agriculture, Agersborg, H. P. Kjerschow, 266-269.

scientific methods of control suggested, Huntsman, A. G., 364-367. Arizona, effect of 1934 drought on fish life, James, M. C., 61.

Arkansas, effect of 1934 drought on fish life, James, M. C., 60. largemouth black bass rearing at Lonoke, Hogan, Joe, 127-131.

Artificial spawning of speckled trout, use of physiological saline, Werner, W. H. R., 346-349.

Atlantic salmon, cause of high mortality after spawning, Belding, David

L., 219-222. spawning habits, Belding, David L., 211-216.

spring spring so, fall running, Belding, David L., and Kitson, J. Arthur, 225-230. taxonomy, Mottley, C. McC., 324.

Backswimmers and beetle larvae eliminated with cod-liver oil spray, Oliver, R., 136.

Bacterial count and chemical tests, significance in determining relative freshness of haddock, Griffiths, Francis P., and Stansby, Maurice E., 401-406.

Bait dealers should propagate their own minnows to obviate wholesale destruction of forage fish, Markus, Henry C., 93-96.

Baker, Davis (In Memoriam), 46.

Barr, Harry, inventor of only satisfactory fishway tested, Webster, B. O., 30.

"Barren" rainbow trout spawning later showed New Hampshire spawning season to extend from last November to middle of June, Agersborg, H. P. Kjerschow, 168.

Bass breeding in fertilized ponds, ecological study, Meehean, O. Lloyd, 151-154

Chem

Chlor Circu Cisco

Clade

Clup

Coar and Coas

Code Colo

Com

Com fis

Com

on

on

Con

Cop

Cop

Cor

a Cor Cot

Cor

Cra

Cre

Cu Cy Da

Da

D

D

D

- largemouth black, rearing at Lonoke, Arkansas, Hogan, Joe, 127-131. new hatchery at South Otselic, New York, and its first year's operations, Kingsbury, Oliver R., 132-138.
- production costs cut materially by floating equipment, Regan, C. C., 143-145.
- production, standard methods of computing, Langlois, T. H., 163-166, social behavior in rearing ponds, Langlois, T. H., 146-150.
- Beetle larvae and backswimmers eliminated with cod-liver oil spray, Oliver,
- R., 136.

 Belleville hatchery, Bay of Quinte, maskinonge culture, MacKay, H. H. and Werner, W. H. R., 313-317.

 Black bass legislation (1935), Denmead, Talbott, 97-102.
- Black-head minnows (Pimephales promelas) should be reared by bait dealers to obviate wholesale destruction of forage fish, Markus, Henry C., 94.
- Black-nosed dace, aquatic and surface drift food eaten, tabulated, 73.
 Black River and Oswegatchie watershed, chemical characteristics, Faigen
- baum, Harold M., 189-196.
- Blood suckers, do they affect the fish population of a lake? Johnson, Herbert, 363.
- Blunt-nose minnows (Hyborhynchus notatus) should be reared by bait dealers to obviate wholesale destruction of forage fish, Markus, Henry
- Bottom samples, method of taking, Needham, P. R., 238-240. Bream, Abramis brama, recommended for introduction into Canadian waters,
- Borodin, N. A., 368.
- as affected by salt water in varying concentrations, survival in hours tabulated, 84.
- Breeding of older males recommended, Agersborg, H. P. Kjerschow, 267. selective, for growth promotion in trout, Davis, H. S., 197-202.
- British Columbia studies on coarse fish and the predator problem, Clemens,
- W. A., 318-321.

 Brome lake, Quebec, dominating species of aquatic plants, Spier, J. D., 464-468.
- plankton distribution, Phillips, Mrs. J. T., 461-463. Brook trout growth when released, vs. growth in hatchery (disc.), 80. spawning period, White, H. C., 356-357.
- aquatic and surface drift food eaten, in tabular form, 73.
- Buckeye Lake: see Lake Buckeye. Bullheads, aquatic and surface drift food eaten, in tabular form, 74 By-laws of American Fisheries Society as amended to date, 472-474.
- Canada, introduction of Russian fishes recommended, Borodin, N. A., 368-369. Cannibafism in bass rearing, prevention methods, Langlois, T. H., 146-150. elimination in largemouth black bass rearing ponds, Hogan, Joe, 128.
- methods of preventing, Langlois (disc.), 139. Carassius auratus infested with Lernaea carassii, Tidd, Wilbur M., 176-
- 180. carassius recommended for introduction into Canadian waters, Borodin, N. A., 368.
- Carp: see Carassius auratus and Carassius carassius.
- Cary, Guy (In Memoriam), 46. Casselman, E. S. (In Memoriam), 46.
- Census of angler's catch, present methods inadequate (disc.), 51-53.
- Champlain watershed, chemical characteristics, Faigenbuum, Harold M., 189-196.

Chemical tests and bacterial count in determining relative freshness of haddock, Griffiths, Francis P., and Stansby, Maurice E., 401-406. Chlorine gas effective in killing coarse fish (disc.), 280.

oyd,

ons,

C.,

ver,

H.

eal-

nry

en-

son,

eal-

nry

ers,

bu-

ens,

D.,

150.

76-

lin,

M.,

Circular pools advantageous for bass raising, Surber, Eugene (disc.), 141. Cisco, origin and distribution in inter-glacial period, Mottley, C. McC. 324-325.

Cladocera and Copepoda, distribution in Manitou and Brome lakes, Quebec, Phillips, Mrs. J. T., 461-463.

pallasii spawning, quantitative studies, Hart, John Lawson, and Tester, Albert L., 307-312.

Coarse fish eliminated previous to stocking, Catt, James, 276-280.

and predator problem in relation to fish culture, Clemens, W. A., 318-321. Coastal fisheries and weather conditions, forecasting feasible, Hachey, H. B., 382-389.

Code, N.R.A., for the fishery industry, Fiedler, R. H., 32-36.

Colorado, effect of 1934 drought on fish life, James, M. C., 60.
Combat of male salmon at spawning time (disc.), Greeley, 217-218.
Commercial fisheries, value of questionnaires, Van Oosten, John, 107-117.
fishing, report division of, Clemens, W. A. (including Fiedler statement), 32-37.

Committee on American Fish Policy, report for 1933-1934, 25-27. on Foreign Relations, report for 1933-1934, 20-23.

on relations with Federal, Provincial, and State governments, report for 1933-1934, 23-25.

Conservation of water, Bell, Frank T., 54-56.

Constitution and by-laws of American Fisheries Society, as amended to date, 472-474.

Copepods and Cladocera, distribution in Manitou and Brome lakes, Quebec, Phillips, Mrs. J. T., 461-463.

Copper sulphate in elimination of coarse fish, Catt, James, 276-280.

Coregonus clupeaformis growth in Trout Lake, Wisconsin, Hile, Ralph,

and Deason, Hilary J., 231-237.

albula, recommended for introduction into Canadian waters, Borodin,

N. A., 368.

Corliss, C. G. (In Memoriam), 46.

Cottonwood lakes, California, life-history of golden trout, Curtis, Brian,

Counting fry and fingerling rapidly and accurately, new method, Prevost, Gustave, 270-275.

Crayfish in bass ponds for control of vegetation (disc.), 150.

Creek chub spawning habits; its propagation in ponds, Markus, Henry C.,

Cut-throat, taxonomy, Mottley, C. McC., 324.
Cyprinus carpio infested with Lernaea carassii, Tidd, Wilbur M., 176-180.

Date: see horned dace, black-nosed dace.

Dams on lakes and streams, their physiographical and mechanical effects

on the impounded waters, Richardson, L. R., 457-458. Daphnia cultures at new South Otselic hatchery, New York, Kingsbury,

Oliver R., 135-136.

and other forage organisms propagated intensively in small ponds, Embody, G. C., and Sadler, W. O., 205-210.

pulex survived in water with an oxygen tension down to 0.05 c.c.

per litre, Smith, M. W., 414.

Deforestation, ill effects in Mississippi River Valley, Culler, C. F., 328. Departure Bay, herring spawning, quantitative studies, Hart, John Lawson, and Tester, Albert L., 307-312.

Disease of fish, ulcer, described, Fish, Frederic F., 252-258.

fungous, appearance on eggs coincident with desertion of the nest by the male, Kingsbury, Oliver R., 137.

Fisher

Fishw

Floodi

Food

cost

eate

nuti

Food

con

fres

inci

ine

qua

sur

Food Fora

org

Fora

Fore Fres

Fry pr Fun

Furi Gas

Gler

Cok

sh

Gold

Gol 25 Gra

Diseases of fish, treatment of underlying causes rather than symptoms to be desired, Huntsman, A. G., 1934, 364-367.

Distribution of bottom foods, factors governing, Needham, P. R., 246-247. Dolly Varden, origin and distribution in inter-glacial period, Mottley, C McC., 324-325.

Domestication of bass to prevent cannibalism, Langlois, T. H., 146-150. Domesticated vs. wild trout, differing rates of growth, Dinsmore, A. H., 203-204.

Drought of 1934, effect on fish life, James, M. C., 57-62.

Dunlap, Irving H. (In Memoriam), 46. Eaton, E. H. (In Memoriam), 46.

Ecology of fertilized ponds for bass rearing, Meehean, O. Lloyd, 151-154. Egg planting, "green" vs. eyed-eggs, Foerster, R. E., 381. Eggs as food, best method of feeding, Agersborg, H. P. Kjerschow, 440. of herring at Departure and Nanoose Bays, Vancouver Island, number spawned and mortality, Hart, John Lawson, and Tester, Albert L., 307-312

of trout, relation of temperature to incubation period, Embody, G. C., 281-292.

European trout, origin and taxonomy, Mottley, C. McC., 324-325. Environment vs. heredity as influence on time of spawning, Greeley

(disc.), 358. Environmental conditions in trout stream management, Moore, Emmeline, Greeley, J. R., Greene, C. W., Faigenbaum, H. M., Nevin, F. R., and Townes, H. K., 68-80.

Evolution in salmonoids, Mottley, C. McC., 323-327

Feeding habits of maskinonge, MacKay, H. H., and Werner, W. H. R.,

315-316.

of males for more abrupt and complete ripeness, Agersborg, H. P. K., 267.

Fertilization of ripe ova with milt from salmon parr produced fry with 60

per cent deformity and eyeless monsters, White, H. C., 361.

Fertilized waters, dissolved oxygen content, Smith, N. W., 408-415.

Fertilizers, dried sludge from disposal plant successfully used in equal

amounts with cow manure, Markus (disc.), 436. influence on dissolved oxygen in fish ponds, Wiebe, A. H., 181-188. in pondfish production, ecological aspects, Meehean, O. Lloyd, 151-154.

in ponds, early vs. late fertilizing, Hogan (disc.), 140. in rearing ponds for largemouth black bass, Hogan, Joe, 129.

used in Daphnia and other forage organism culture, Embody, G. C., and Sadler, W. O., 205-210.
used at new South Otselic hatchery, New York, Kingsbury, Oliver R.,

134-136.

Fin rot disease and ulcer, differences shown, Fish, Frederic F., 255. Fingerling and fry counting, new method, Prevost, Gustave, 270-275.

Fish culture, better staff recommended to obviate present poor success in aquiculture due to ignorance, Agersborg, H. P. Kjerschow, 268-269. report Vice-President Division of, for 1933-1934, Webster, B. O., 28-32. Fish in fresh water streams as affected by salt water from oil wells,

Wiebe, A. H., Burr, J. G., and Faubion, H. E., 81-86.

Fish life as affected by drought of 1934, James, M. C., 57-62.

Fish meal, white, nutritive value, comparison of laboratory and pratical tests for determining, Cleveland, M. M., and Fellers, C. R., 293-303.

Fish species suggested for rearing in sewage treatment ponds, Radebaugh,

Gus H., and Agersborg, H. P. Kjerschow, 454.

Fisheries in coastal regions and weather forecasting, Hachey, H. B., 382-389.

by

to

C

H.,

4.

n.

ber

C.,

ley

ine,

R.,

R.,

K.,

60

ual

C.,

R.,

in 69. lls,

sts

ζh,

- Fishways, discussion of various types, including the new Barr fishway, Webster, B. O., 29-30.
- Flooding areas, mechanical as well as chemical aspects to be considered, Richardson (disc.), 367.
- Food in bottom samples, relation to stream width, variability, seasonal distribution, type vs. quantity, Needham, P. R., 238-240. cost of trout in New York State hatcheries, Deuel, Charles R., 172-175.
- eaten by trout liberated from hatcheries, tabulated, Lord, Russell F., 339-345.
- nutritive value of ground fish meals, Cleveland, M. M., and Fellers, C. R., 293-303.
- Food for fish: beef-heart, beef-liver and Swift's beef meal followed by beef liver and salmon egg meal for young bass, Surber, Eugene (disc.), 141.
- comparison of diets made at South Otselic bass hatchery, Kingsbury, Oliver R., 136.
- fresh, vs. canned carp in bass hatcheries, Langlois (disc.), 139.
- increased production in stream improvement, Davis H. S., 63-66. inexpensive balanced diet for trout and salmon, Agersborg, H. P. K., 155-162.
- quantitative and qualitative analyses of fresh commercial fisheries products for artificial rearing of salmonoids, Agersborg, H. P. K., 435-
- summary of aquatic and surface drift food, tabulated, Moore, Emmeline, Greeley, J. R., Greene, C. W., Faigenbaum, H. M., Nevin, F. R., and Townes, H. K., 73-74.
- Food grinder, new type to prevent pulping of feed, Langlois (disc), 162
- Forage fish, wholesale destruction, Markus, Henry C., 93-96. organisms propagated intensively in small ponds, Embody, G. C., and Sadler, W. O., 205-210.
- Foraging of liberated trout, stomach contents analyzed, Lord, Russell F., 339-345.
- Foreign Relations Committee, report for 1933-1934, Rodd, J. A., 20-23.
- Freshwater fish, effect of salt water environment, Wiebe, A. H., Burr, J. G., and Faubion, H. E., 81-86.
- Fry and fingerling counting, new method, Prevost, Gustave, 270-275. production from eyed-egg planting, Foerster, R. E., 379-381.
- Fungous growth on eggs coincident with desertion of the nest by the male, Kingsbury, Oliver R., 137.
- Furunculosis, different from ulcer disease, Fish, Frederic F., 252.
- Gaspe County, Quebec, general discussion of lakes, Taylor, B. W., and Lindsay, R. C., 424-431.
- Glenora hatchery, Bay of Quinte, observations on culture of maskinonge, MacKay, H. H., and Werner, W. H. R., 313-317.
- Golden shiner as affected by salt water in varying concentrations, survival in
- hours tabulated, Wiebe, A. H., Burr, J. G., and Faubion, H. E., 84. should be reared by bait dealers to obviate wholesale destruction of forage fish, Markus, Henry C., 94.
- Golden trout of Cottonwood lakes, life-history, Curtis, Brian, 259-265.
- Goldfish infested by Lernaea carassii, Tidd, Wilbur M., 176-180. as possible effective means of eliminating dragonfly larvae, Langlois (disc.), 138.
- Grayling, origin and distribution in inter-glacial period, Mottley, C. McC. 324-325.

Ground fish meals, nutrient value, comparison of laboratory and practical tests for determining, Cleveland, M. M., and Fellers, C. R., 293-303.

Growth of brook trout, effect of heredity, Dinsmore, A. H., 203-204.

of brook trout in hatcheries, vs. growth when released, Markus, H. C.

in ! Idaho Illino

Imma

mpo

in

Impo In A Incu

> Indi Inse Intr

> low

Za

Kar Kar

Kei

Lal

La

L

I

(disc.), 80.

of chicks, red fish meal as sole source of protein, experiments, Cleveland,

M. M., and Fellers, C. R., 297-301.

of golden trout in Cottonwood lakes, California, Curtis, Brian, 259-265.

and heredity in trout, Davis, H. S., 197-202.

of Pomolobus pseudoharengus in Seneca Lake, N. Y., Odell, T. T., 118-126. Tate of trout as studied in Trammel Creek, Moore, Emmeline, Greeley, J. R., Greene, C. W., Faigenbaum, H. M., Nevin, F. R., and Townes, H. K., 74-76.

of rats fed fish meal as sole source of protein, experiments, Cleveland, M. M., and Fellers, C. R., 295-297.

of salmon parr, improved technical methods for determining by scale

measurements, Belding, David L., 103-106.
of selected trout in Antigonish hatchery, Nova Scotia (disc.), 202.
of trout treated with potassium permanganate vs. treated with salt,
Prevost, Gustave, 304-306. and water requirements of maskinonge, MacKay, H. H., and Werner,

W. H. R., 316-317. of whitefish in Trout Lake, Wisconsin, Hile, Ralph, and Deason, Hilary J., 231-237.

Haddock freshness, significance of bacterial count and chemical tests in determination, Griffiths, Francis P., and Stansby, Maurice E., 401-

Hatchery for bass, floating, Regan, C. C., 143-145. for bass at South Otselic, N. Y., and its first year's operations, Kingsbury, Oliver R., 132-138.

predators, Hogan, Joe, 129. fry emerge during day-light, whereas experiment with planted eye-eggs in Cultus Lake showed the fry to emerge from the gravel bed between dusk and dawn, Foerster, R. E., 390.

shown to have little evil effect on the gallant nature of trout, experiments described, Lord, Russell F., 339-345.

Haynes, W. deF. (In Memoriam), 46.

Health coefficient much greater with new diet than with beef liver or any other trout food used, Agersborg, H. P. K., 160.

Heredity, effect on growth of brook trout, Dinsmore, A. H., 203-204.

and growth in trout, Davis, H. S., 197-202.

vs. environment as influence on time of spawning, Greeley (disc.), 358. Herring meal fertilizer effect on oxygen content in open containers shown graphically, Smith, M. W., 411.spawning, quantitative studies, Hart, John Lawson, and Tester, Albert L., 307-312.

Hogarth, George R. (In Memoriam), 46.

Horned dace (Semotilus atromaculatus) should be reared by bait dealers to obviate wholesale destruction of forage fish, Markus, Henry C.,

summary of aquatic and surface drift food eaten, tabulated, Moore, Emmeline, Greeley, J. R., Greene, C. W., Faigenbaum, H. M., Nevin, F. R., and Townes, H. K., 73.

Hyborhynchus notatus should be reared by bait dealers to obviate wholesale destruction of forage fish, Markus, Henry C., 94.

nuchalis, wholesale destruction, Markus, Henry C., 93-96.

Hydrogen-ion concentration as influenced by algae, M'Gonigle, R. H., 420.

in ponds as influenced by vegetation and fertilizers, Wiebe, A. H., 181-188.

Idaho, effect of 1934 drought on fish life, James, M. C., 61. Illinois, effect of 1934 drought on fish life, James, M. C., 59.

Immature salmon parr fertilize ripe ova, but 60 per cent of resulting fry were deformed or eyeless monsters, White, H. C., 361.

Impounded waters, effects of dams on lakes and streams, ecology, physiographical and mechanical elements involved, Richardson, L. R., 457-458.

in water conservation, Bell, Frank T., 55.

Impounding of salt waters from oil fields in Texas, Wiebe, A. H., Burr, J. G., and Faubion, H. E., 81-86.

In Memoriam, 46.

ctical 3-303.

H. C.

eland,

9-265.

8-126.

eeley,

wnes,

eland,

scale

salt,

rner,

ilary

s in

401-

oury,

s in

be-

ex-

any

358.

own bert

lers C.,

Em-

, F.

ole-

420.

Incubation period of trout eggs, effect of temperature, Embody, G. C., 281-292.

Indiana, effect of 1934 drought on fish life, James, M. C., 58.

Insects, aquatic, in Waddell Creek riffles, their contribution by weight and numbers to available food supply, Needham, P. R., 245-246.

Introduction into Canadian waters of Russian fish recommended, Borodin, N. A., 368-369.

lowa, effect of 1934 drought on fish life, James, M. C., 59. nursery pond kettle and outlet, Aitken, W. W., 170-171.

Izaak Walton League: improvement of pollution control, Locke, S. B., 87-92.

Kamloops and steelhead physiographical lines of separation, Mottley, C. McC., 326-327.

Kansas, effect of 1934 drought on fish life, James, M. C., 61.

Kettle and elbow outlet, new type in Iowa nursery pond, Aitken, W. W., 170-171.

Laboratory for experimental research on effect of salt water on fish, organized in Texas, Wiebe, A. H., Burr, J. G., and Faubion, H. E., 83.
 vs. practical tests for determining the nutritive value of fish meals, Cleveland, M. M., and Fellers, C. R., 293-303.

land, M. M., and Fellers, C. R., 293-303.

Lake bottom improvement, discussion in report Vice-President Division of

Fish Culture, Webster, B. O., 31.

Buckeye, Ohio, aquatic vegetation and its bearing on fish life, Roach,
Lee S., and Wickliff, E. L., 370-376.

Brome, Quebec, dominating species of aquatic plants, Spier, J. D., 464-468. Brome, Quebec, plankton distribution, Phillips, Mrs. J. T., 461-463. Champlain, chemical characteristics, Faigenbaum, Harold M., 189-196.

Champlain, chemical characteristics, Faigenbaum, Harold M., 189-196.
Cultus experiments in planting 50,000 eyed-eggs with resultant production of 44,691 fry (88% of total eggs planted), Foerster, R. E., 379-381.

of 44,691 fry (88% of total eggs planted), Foerster, R. E., 379-381. Huron, average spawning seasons for lake trout, whitefish, yellow pikeperch and perch, tabulated, Van Oosten, John, 112.

Manitou, Quebec, dominating species of aquatic plants, Spier, J. D., 464-468.

Manitou, Quebec, plankton distribution, Phillips, Mrs. J. T., 461-463. Michigan, average spawning seasons for lake trout, whitefish, yellow pike-

perch and perch, tabulated, Van Oosten, John, 112.

Lake Superior, average spawning seasons for lake trout, whitefish, yellow pike-perch, and perch, tabulated, Van Oosten, John, 112.

Wapello rearing ponds, new type kettle and outlet, Aitken, W. W., 170-171.

Lake trout, origin and distribution in inter-glacial period, Mottley, C. McC., 324-325

spawning season, in lakes Huron, Michigan, and Superior, tabulated, Van Oosten, John, 112. Lakes of Gaspe County, Quebec, general discussion, Taylor, B. W., and Lindsay, R. C., 424-431.

New

stat

Nomi Note Nutri

Ocea

Ohio Okla 0me

0sw

Outl

0xy

in

of

0xy

at 0xy SI Par Par Par

Per

Per

Ph

Ph

Pil Pi

Pi

P

P

P

P

200-300 acres to be stocked, when not fed by considerable waters containing enemy fish, are treated with copper sulphate to eliminate coarse fish, Catt, James, 276-280.

Largemouth black bass, 1935 legal requirements for further protection, Denmead, Talbott, 97-102.

rearing at Lonoke, Arkansas, Hogan, Joe, 127-131.

Laws and regulations: see Legislation.

Legislation affecting fishery industry enacted during the 73rd Congress, 2nd Session, Clemens, W. A., in report Division of Commercial Fishing for 1933-1934, 37.

for black bass (1935), Denmead, Talbott, 97-102.

Lernaea carassii ("anchor parasite") infesting goldfish and carp, Tidd, Wilbur M., 176-180.

Liberating young salmon in a stream where salmon had never run brought spawning salmon the following spring, White, H. C., 361.

Librarian's report, Cobb, Eben W., 19.

Ling, origin and distribution in inter-glacial period, Mottley, C. McC., 324-

Manitou lake, Quebec, dominating species of aquatic plants, Spier, J. D., 464-468.

plankton distribution, Phillips, Mrs. J. T., 461-463.

Maskinonge culture at Belleville and Glenora fish hatcheries, Bay of Quinte,

MacKay, H. H., and Werner, W. H. R., 313-317.

Mating, constant discarding of older males for younger specimens detrimental, Agersborg, H. P. Kjerschow, 267.
of salmon described, Belding, David L., 213-214.

Members American Fisheries Society, honorary, 475; patrons, 475-476; life, 477; active, 478-492; state membership, 492; clubs, dealers, etc., 492-493; libraries, 494; corresponding, 494.

Michigan, effect of 1934 drought on fish life, James, M. C., 57.

recommendations on regulations based on majority opinion of commercial fishermen, Van Oosten, John, 115.

spawning season for lake trout, whitefish, yellow pike-perch, tabulated,

Van Oosten, John, 112. Migration of salmon, factors influencing their return from the sea, Huntsman, A. G., 351-354.

of steelhead and silver salmon, Taft, A. C., 251.

Milt from immature salmon parr fertilized eggs, but 60% of resulting fry were deformed or eyeless monsters, White, H. C., 361.

Minnesota, installation of sewage disposal plants at Minneapolis and St. Paul, 28-29.

Minnows should be reared by bait dealers to obviate their wholesale destruction, Markus, Henry C., 93-96.

Mississippi fisheries, deforestation, erosion, etc., recommended corrections,

Culler, C. F., 328-329.

Missouri, effect of 1934 drought on fish life, James, M. C., 57.

Mortality of Atlantic salmon after spawning, cause, Belding, David L., 219-

in trout and salmon reduced to practically zero, Agersborg, H. P. Kjerschow, 160.

Muskellunge propagation in Wisconsin, Webster, B. O., 31-32. N. R. A. code for fish industry, Fiedler, R. H., 32-36.

Nanoose Bay herring spawning, quantitative studies, Hart, John Lawson, and Tester, Albert L., 307-312.

Nebraska, effect of 1934 drought on fish life, James, M. C., 59.

Nests, floating, for bass, Regan, C. C., 143-145.

New York, new bass hatchery at South Otselic, and its first year's operations, Kingsbury, Oliver R., 132-138. state hatcheries, cost of trout food, Deuel, Charles R., 172-175.

Nominations of officers, 43.

Notemigonus crysoleucas should be reared by bait dealers to obviate whole-sale destruction of forage fish, Markus, Henry C., 94.

Nutritive value of white fish meals, Cleveland, M. M., and Fellers, C. R., 293-303.

Oceanography meteorology and the fisheries, Hachey, H. B., 382-389.

Ohio, effect of 1934 drought on fish life, James, M. C., 58.

Oklahoma, effect of 1934 drought on fish life, James, M. C., 59.
Omerus mordax Mitchill, method of planting on a small scale, Richardson,
L. R., and Belknap, G. W., 432-434.

Oswegatchie and Black River watershed, discussion of depth, temperature, free carbon dioxide and methyl orange alkalinity, dissolved oxygen and pH of bottom waters, Faigenbaum, Harold M., 189-196, Outlet, new type in Iowa nursery pond, Aitken, W. W., 170-171. Oxygen content of artificial lakes with a great deal of timber (disc.), 459-

460.

and

itain.

Oarse

ction,

gress.

ercial

Wil-

ought

324-

. D.,

inte,

letri-

life, 492-

ercial

ated,

ints-

fry

St.

de-

ons,

219-P.

son,

in fertilized waters, Smith, M. W., 408-415.
of water ranging from .15 to 2.00 parts per million, actual case of fish surviving for several hours, Wickliff (disc.), 376.

Oxygen depletion by algae cause of fish mortality in hatcheries, M'Gonigle,

R. H., 416-422. and vegetation control in shallow waters, Hayford, Charles O. (disc.), 377. 0xygen, nocturnal depressions in fish ponds with special reference to excess vegetation and fertilizers, Wiebe, A. H., 181-188.

supply of aquatic plants and their bearing on fish life, Roach, Lee S., and Wickliff, E. L., 370-376.

Parasites and their importance, Parnell, I. W., 390-399.

Parasitism: see Blood suckers.

Parr: see Salmon parr.

Perch, spawning season in lakes Huron, Michigan, and Superior, tabulated. Van Oosten, John, 112

Perrier, Edmond (In Memoriam), 46.

Physiological saline in experiments with artificial spawning of speckled trout, Werner, W. H. R., 346-349.

Phytoplanktonic growth, effect on oxygen content in fertilized water shown graphically, Smith, M. W., 412.

Pike, origin and distribution in inter-glacial period, Mottley, C. McC., 324-325.

Pike-perch, yellow, spawning season in lakes Huron, Michigan and Superior, tabulated, Van Oosten, John, 112. Pimephales promelas should be reared by bait dealers to obviate wholesale destruction of forage fish, Markus, Henry C., 94.

Plankton distribution in Manitou and Brome lakes, Quebec, Phillips, Mrs.

J. T., 461-463. Planting of Osmerus mordax Mitchill on a small scale, method described, Richardson, L. R., and Belknap, G. W., 432-434.

Pollution control in Michigan (disc.), 91-92.

federal agency for control proposed as against present inadequate state provisions, Locke, S. B., 87-91.

of hatchery waters by algae causing severe annual loss of fish, M'Gonigle,

R. H., 416-422 of streams by salt water from oil fields, Wiebe, A. H., Burr, J. G., and Faubion, H. E., 81-86.

Pomolobus pseudoharengus, life history and ecology in Seneca Lake, New York, Odell, T. T., 118-126.

wa

Scale

Scot

Schu

Sea

Seco

Sele

of

Sem

Sen

Sew

She

She

Silt

Silv

Sm

Sna

Soi

So

So

Sp

Predator and coarse fish problem in relation to fish culture, Clemens, W. A., 318-321.

Predators (grebe, herons, terns, kingfishers and snakes) at Lonoke hatchery, Arkansas, Hogan, Joe, 129.

Propagating daphnia and other forage organisms intensively in small ponds, Embody, G. C., and Sadler, W. O., 205-210.

Propagation, stream improvement in relation to, Davis, H. S., 63-67.

Protection of black bass, 1935 legal requirements, Denmead, Talbott, 97-102 and legislation, report division of, Amsler, Guy, 38-39.

Proteus hydrophilus possibly secondary invader in ulcer disease lesions, Fish, Frederic F., 253.

Quebec, Lakes Manitou and Brome, plankton distribution, Phillips, Mrs. J. T., 461-463; Spier, J. D., 464-468.
trout lakes in Gaspé County, general discussion, Taylor, B. W., and Lind-

say, R. C., 424-431.

Rainbow trout, origin, taxonomy and relations, Mottley, C. McC., 323-327.

Rainbow trout, origin, taxonomy and relations, Mottley, C. McC., 323-327.

Raquette watershed, chemical characteristics, Faigenbaum, Harold M., 189196.

Ravenel, W. de C. (In Memoriam), 46.

Reclamation, hydroelectric, Bell, Frank T., 54-56.

Redd digging of salmon described, Belding, David L., 212-213.

Regulations, recommendations based on majority opinion of the commercial fishermen, State of Michigan, Van Oosten, John, 115.

Rock bass, environment vs. temperature as influence on time of spawning, Langlois (disc.), 359.

Russian fishes recommended to be introduced into Canadian waters, Borodin, N. A., 368-369.

Saint Lawrence watershed, chemical characteristics, Faigenbaum, Harold M.,

189-196.

Salinity, low, not a factor influencing salmon toward river mouths, Hunts-

man (disc.), 355.

Salmo agua-bonita Jordan, life-history; S. roosevelti, a color variation or subspecies of S. agua-bonita. Curtis. Brian. 259-265.

subspecies of S. agua-bonita, Curtis, Brian, 259-265. fontinalis spawning period, White, H. C., 356-357.

Salmon attracted to streams by milt in water? White, H. C., 360-361. factors influencing their return from the sea, Huntsman, A. G. 351-354. inexpensive balanced diet for, Agersborg, H. P., Kjerschow, 155-162.

parr annual growth, improved technical methods for determining by scale measurements, Belding, David L., 103-106.

regulations adopted for inspection and grading of canned, Clemens, W. A., in report Division of Commercial Fishing, 36.

in report Division of Commercial Fishing, 36.
run on the Skagit after experimental planting of sockeye, Dinsmore (disc.), 362.

secondary sexual characters in (disc.), 217. spawning habits, Belding, David L., 211-216.

taxonomy, Mottley, C. McC., 323-324.

varieties: evidence pro and con separate races, Belding, David L., and Kitson, J. Arthur, 225-230.

Salt treatment vs. potassium permanganate as influencing growth of trout, Prevost, Gustave, 304-306. water from oil fields polluting streams in Texas, Wiebe, A. H., Burr, J. G., and Faubion, H. E., 81-86.

Scale measurements, improved technical methods in determination of annual growth of salmon parr, Belding, David L., 103-106.

Scott Creek, California, steelhead experiments, Taft, A. C., 248-251.

Schuil, Henry A. (In Memoriam), 46.

, 304-

W. A.,

hatch-

ponds,

7-102.

Fish,

Mrs.

Lind-

3-327.

189-

ercia!

ning,

Boro-

1 M.,

ints-

n or

1.

cale

A.,

ore

and

out,

Sea conditions and atmospheric pressure,—weather and fishery forecasting, Hachey, H. B., 382-389.

Secondary sexual characters in salmon, Belding, David L. (disc.), 217.

Selective breeding in trout for growth promotion, Davis H. S., 197-202. of speckled trout, Shillington, K. G., 274-275.

Semotilus atromaculatus should be reared by bait dealers to obviate wholesale destruction of forage fish, Markus, Henry C., 94.

Seneca Lake, New York, ecological conditions with special reference to Pomolobus pseudoharengus, Odell, T. T., 118-126.

Sewage treatment, economic value of effluent in wildlife conservation, Radebaugh, Gus H., and Agersborg, H. P. Kjerschow, 443-445.

Sheldon, Edward D. (In Memoriam), 46.

Shelter provision, in stream improvement, Davis, H. S., 63-64.

Shrimp, exclusive diet of ground shrimp at South Otselic bass hatchery resulted in weakened and parasitized fish which quickly recovered with change of diet, Kingsbury, Oliver R., 136.

Silt erosion control essential factor, Culler, C. F., 328-329.

Silver hake, adult, an exclusive diet of one and one half inch brook trout, found detrimental, Agersborg, H. P. K., 155.

Smallmouth black bass, legal requirements for further protection, Denmead, Talbott, 97-102.

Snake: see Water snake.

Soil erosion control, Davis, H. S., 63-65.

South Dakota, effect of 1934 drought on fish life, James, M. C., 58.

South Otselic, New York, new bass hatchery and its first year's operations, Kingsbury, Oliver R., 132-138.

Spawning, artificial, comparison of fertility percentages using "dry" vs. physiological or normal saline solution methods, Dinsmore (disc.), 349.

artificial, use of physiological saline in experiments, Werner, W. H. R., 346-349.

of Atlantic salmon, first description of natural spawning, Belding, David L., 214-216.

habits of steelhead trout, Needham, P. R., and Taft, A. C., 332-338.

of herring, quantitative studies, Hart, John Lawson, and Tester, Albert L., 307-312.

loss of weight previous to and during in Atlantic salmon, Belding, David L., 219-222.

migration of steelhead and silver salmon, Taft, A. C., 251.

of Pomolobus pseudoharengus in Seneca Lake, New York, Odell, T. T., 118.

season in Michigan, in tabular form, from questionnaires, Van Oosten, John, 112.

season of rainbow trout, Agersborg, H. P. K., 167-169.

of trout, age as factor influencing period, Dinsmore (disc.), 358-359.

of wild bass at new South Otselic hatchery, Kingsbury, Oliver R., 132, Speckled trout selective breeding, Shillington, K. G., 274-275.

broo

broo

eggs

feed

gold

grov

grov

fror

Lal

rail

rais

rea

spe

sp

ste

st

Ulce

Upp

Urt

Uta

Ves

Spermatozoa of speckled trout kept alive for four minutes in normal saline,
 Werner, W. H. R., 346-349; activity, Greeley (disc.), 350.
 Sport and alertness in trout liberated from hatcheries, Lord, Russell F.

339-345.

State action vs. federal agency to control pollution, Locke, S. B., 90.

Steelhead and silver salmon migration, Taft, A. C., 248-251. spawning habits, Needham, P. R., and Taft, A. C., 332-338. taxonomy, Mottley, C. McC., 323.

Stewart, William D. (In Memoriam), 46.

Stream bottom foods, Needham, P. R., 238-247.

improvement, discussion in report Vice-President Division of Fish Culture, Webster, B. O., 30-31.

improvement, purpose and value, Davis, H. S., 63-67.

management as studied in Trammel Creek, New York, Moore, Emmeline, Greeley, J. R., Greene, C. W., Faigenbaum, H. M., Nevin, F. R., and Townes, H. K., 68-80.

pollution with salt water from oil fields in Texas, Wiebe, A. H., Burr.

J. G., and Faubion, H. E., 81-86.

Stunting vs. growth inhibition in starved fish, Agersborg, H. P. Kjerschow, 439-440.

Sturgeon, Acipenser ruthenus, recommended for introduction into Canadian waters, Borodin, N. A., 368.

Squawfish, distribution in inter-glacial period, Mottley, C. McC., 325.

Surveys, value of questionnaires, Van Oosten, John, 107-117.

Temperature effect on incubation period of trout eggs, Embody, G. C., 281-

for rearing bass (disc.), 142.

requirements of Pomolobus pseudoharengus, Odell, T. T., 124.

of sea, factor influencing maturing of salmon, Huntsman, A. G., 351-354, of spawning ponds for largemouth black bass, Hogan, Joe, 127.

of streams, control of, Davis, H. S., 63-66.

Tench, Tinca tinca, recommended for introduction into Canadian waters,
Borodin, N. A., 368.

Texas stream pollution with salt water from oil fields, Wiebe, A. H., Burr, J. G., and Faubion, H. E., 81-86.

Timber, lakes containing quantities, and its effect on the oxygen content

(disc.), 459-460.

Tinca tinca recommended for introduction into Canadian waters, Borodin, N. A., 368.

Toxic condition of water due to growth of algae (disc.), 423.

Trammel Creek (Mohawk watershed), New York, study of stream and suggested methods of trout stream management, Moore, Emmeline, Greeley, J. R., Greene, C. W., Faigenbaum, H. M., Nevin, F. R., and Townes, H. K., 68-80.

Treasurer's report for 1933-1934, 15-18.

Trematode worms, salt vs. potassium permanganate used in treatment for, influence on growth of trout, Prevost, Gustave, 304-306.

Trexler, Harry C. (In Memoriam), 46.

Trout, age in relation to time of spawning, Dinsmore (disc.), 358-359.

brook, effect of heredity on growth, Dinsmore, A. H., 203-204.

brook, spawning period, White, H. C., 356-357.

eggs, relation of temperature to incubation period, Embody, G. C., 281-292. feeding in New York State hatcheries, cost of, Deuel, Charles R., 172-175. golden, in Cottonwood lakes, California, life-history, Curtis, Brian, 259-265. growth and heredity, Davis, H. S., 197-202.

growth rate as studied in Trammel Creek, New York, Moore, Emmeline, Greeley, J. R., Greene, C. W., Faigenbaum, H. M., Nevin, F. R., and

Townes, H. K., 74-76.

132.

aline.

II F.,

Cul-

line,

urr.

low,

lian

81-

54.

rs,

T,

at

n,

from hatcheries as foragers and game fish, Lord, Russell F., 339-345. lakes in Gaspé County, Quebec, general discussion, Taylor, B. W., and Lindsay, R. C., 424-431.

Wisconsin, growth of whitefish (Coregonus clupeaformis), Hile, Ralph, and Deason, Hilary J., 231-237.

rainbow, origin and relations, Mottley, C. McC., 323-327. rainbow, spawning season, Agersborg, H. P. Kjerschow, 167-169.

reared to legal size in less than ten months on new diet, Agersborg, H. P. K., 155-162.

speckled, selective breeding, Shillington, K. G., 274-275.

speckled, spermatozoa kept alive four minutes in normal saline in artificial spawning experiments, Werner, W. H. R., 346-349.

steelhead, spawning habits, Needham, P. R., and Taft, A. C., 332-338. stream management, Moore, Emmeline, Greeley, J. R., Greene, C. W., Faigenbaum, H. M., Nevin, F. R., and Townes, H. K., 68-80.

Uker disease of trout, Fish, Frederic F., 252-258.

Upper Hudson watershed, chemical characteristics, Faigenbaum, Harold M., 189-196.

Urbana Champaign sewage treatment works, lagoon used as fish pond, microscopic biota tabulated, Radebaugh, Gus H., and Agersborg, H. P. Kjerschow, 447.

Utah, effect of 1934 drought on fish life, James, M. C., 60.

Vegetation areas alternately flooded and allowed to revert to land conditions for production of nutrient salts through decomposition of land plants recommended, Huntsman, A. G., 366-367.

of Buckeye Lake, oxygen supply and its effect on fish life, Roach, Lee S., and Wickliff, E. L., 370-376.

control, Langlois (disc.), 139-140. control to prevent cannibalism in bass, Langlois, T. H., 148-149.

influence on dissolved oxygen in fish ponds, Wiebe, A. H., 181-188.

of lakes Brome and Manitou, Quebec, dominating species, Spier, J. D., 464-468.

Waddell Creek, California, steelhead experiments, Taft, A. C., 248-251.

Ward, Robertson S. (In Memoriam), 46. Water conservation, Bell, Frank T., 54-56.

fluctuation control in stream improvement, Davis, H. S., 63-65.

pH as influenced by algae, M'Gonigle, R. H., 420.

pollution, installation of sewage disposal plants, in report Vice-President Division of Fish Culture, 28-32.

snakes found to feed abundantly on tadpoles with slim traces of fish, Langlois (disc.), 140.

Weather conditions and coastal fisheries, forecasting feasible, Hachey, H. B., 382-389.

Ada

Po

In

Qt

W Age

Ams

Bek

Sa

S₁

Bell

Bell N Bor Bar Cat G Clas Cler R Cle Col

> Day S Dea De Die

Em En Fa

Age

- Weaver, Judd S. (In Memoriam), 46.
- Weed cutters (disc.), 377-378.
- Weight, loss of, in Atlantic salmon previous to and during spawing period. Belding, David L., 219-222.
- White, E. Hamilton (In Memoriam), 46.
- Whitefish (Coregonus clupeaformis), growth in Trout Lake, Wisconsin, Hile, Ralph, and Deason, Hilary J., 231-237.

 origin and distribution in inter-glacial period, Mottley, C. McC., 324-325. spawning season, in lakes Huron, Michigan and Superior, in tabular form, Van Oosten, John, 112.
- Wild vs. domesticated trout, differing rates of growth, Dinsmore, A. H.,
- Wisconsin, effect of 1934 drought on fish life, James, M. C., 57.

 Trout Lake, growth of whitefish (Coregonus clupeaformis), Hile, Ralph, and Deason, Hilary J., 231-237.
- Wyoming, effect of 1934 drought on fish life, James, M. C., 58.
- Yellow pike-perch spawning season, in lakes Huron, Michigan and Superior, in tabular form, Van Oosten, John, 112.
- Zalsman, P. G. (In Memoriam), 46.

PART II. AUTHOR INDEX

Adams, M. P.: Pollution of Michigan streams with brine from oil fields (disc.), 85-86.

Pollution and water conservation in Michigan (disc.), 91-92.

Agersborg, H. P. Kjerschow: Aquiculture and agriculture, 266-269. Inexpensive balanced diet for trout and salmon, 155-162.

Quantitative and qualitative analyses of foods for artificially reared salmonoids, 435-442.

When do rainbow trout spawn? 167-169.

B.,

d,

le,

m,

L,

h.

DΓ,

Agersborg, H. P. K., joint author: see Radebaugh, Gus H. Aitken, W. W.: Iowa nursery pond kettle and outlet, 170-171.

Amsler, Guy: Report Division Protection and Legislation for 1933-1934, 38-39.

Belding, David L.: High mortality in Atlantic salmon after spawning, 219-

Salmon parr annual growth, improved technical methods for determining scale measurements, 103-106. Spawning habits of Atlantic salmon, 211-216.

Belding, David L., and Kitson, J. Arthur: Spring-run and fall-run Atlantic salmon, 225-230.

Belknap, G. W., joint author: see Richardson, L. R. Bell, Frank T.: Report Committee on Relations with Federal, Provincial, and State governments for 1933-1934, 23-25. Water conservation, 54-56.

Borodin, N. A.: Introduction of Russian fishes into Canadian waters, 368-369.

Burr, J. C., joint author: see Wiebe, A. H.

Catt, James: Copper sulphate in elimination of coarse fish, 276-280.

Growth of selected trout in Antigonish hatchery, Nova Scotia (disc.), 20.2

Clark, G. H.: Need for a measure of the angler's catch, 49-53. Clemens, W. A.: Predator and coarse fish problem in relation to fish culture, 318-321.

Report Division of Commrecial Fishing for 1933-1934, 32-37.

Cleveland, M. M., and Fellers, C. R.: Nutritive value of fish meals, laboratory and practical tests compared, 293-303.

F.: The future of Upper Mississippi fisheries, Curtis, Brian: Golden trout of Cottonwood lakes, 259-265.

Davis, H. S.: Chlorine gas effective in killing coarse fish (disc.), 280.

Growth and heredity in trout, 197-202. Stream improvement, purpose and value, 63-67.

Deason, Hilary J., joint author: see Hile, Ralph.
Denmead, Talbott: Suggested black bass legislation (1935), 97-102.

Deuel, Charles R.: Food cost of trout in New York State hatcheries, 172-175.

Dinsmore, A. 358-359. A. H.: Age of trout in relation to time of spawning (disc.),

Effect of heredity on growth of brook trout, 203-204.

Salmon run on the Skagit after experimental planting (disc.), 362. Embody, G. C.: Trout eggs, relation of temperature to incubation period, 281-292.

Embody, G. C., and Sadler, W. O.: Propagating daphnia and other forage organisms intensively in small ponds, 205-210.

Faigenbaum, Harold M.: Chemical characteristics of Adirondack lakes and ponds, 189-196.

Parnell,

Phillips

Prevost

Potas

Radeba

Reegar Richard Obse

Richar

Roach

Rodd,

Sadler

Shillin Smith Spier,

Stans Surbe Surbe

Taft,

Taft,

Taylo

Terre

Teste Tidd,

Town

Van

Web Wer Wer

Whi

SI Wic

R

St

SI Wie

Wie

Wi

- Faigenbaum, Harold M., joint author: see Moore, Emmeline, et al. Faubion, H. E., joint author: see Wiebe, A. H.
- Fellers, C. R., joint author: see Cleveland, M. M.
- Fiedler, R. H.: Codifying the fishery industry under the N. R. A., 32-36,
- Fish, Frederic F.: Ulcer disease of trout, 252-258.
- Foerster, R. E.: Fry production from eyed-egg planting, 379-381.
- Gordon, Seth: Report of the secretary-treasurer for 1933-1934, 15-18.
- Greeley, John R.: Heredity vs. environment as influence on time of spawning (disc.), 358.

 Greeley, John R., joint author: see Moore, Emmeline, et al.

 Griffiths, Francis P., and Stansby, Maurice E.: Significance of bacterial country and chemical tests in determining relative freelyness of lad. count and chemical tests in determining relative freshness of haddock, 401-406.
- Hachey, H. B.: Weather predictions and coastal fisheries, 382-389.
- Hart, John Lawson, and Tester, Albert L.: Herring spawning, quantitative studies, 307-312,
- Hayford, Charles O.: Oxygen depletion in largemouth bass ponds caused by rapid decomposition of organic matter; control of vegetation in shallow lakes (disc.), 377.

 Hile, Ralph, and Deason, Hilary J.: Growth of whitefish in Trout Lake,
- Wisconsin, 231-237.
- Hogan, Joe: Largemouth black bass rearing at Lonoke, Arkansas, 127-131. Huntsman, A. G.: Factors influencing return of salmon from the sea, 351-354.
 - The problem of control in aquiculture, 364-367.
- James, M. C.: Effect of 1934 drought on fish life, 57-62.
- Johnston, Herbert: Can blood suckers affect the fish population of a lake? 363.
- Kingsbury, Oliver R.: New bass hatchery at South Otselic, N. Y., and its first year's operations, 132-138.
- Kitson, J. Arthur, joint author: see Belding, David L. Langlois, T. H.: Environment vs. temperature as influence on time of spawning in rock bass (disc.), 359.
 - New type of food grinder to prevent pulping of feed (disc.), 162.
 - Social behavior of bass in rearing ponds, 146-150.

- Standard methods of computing bass production, 163-166.

 Locke, S. B.: Value of clean streams, 87-92.

 Lord, Russell F.: Hatchery trout as foragers and game fish, 339-345.

 Measuring the angler's catch (disc.), 52-53.

 MacKay, H. H., and Werner, W. H. R.: Observations on maskinonge cul
 - ture, 313-317.
- Markus, Henry C.: Destruction of forage fish, 93-96.
 Growth of brook trout in hatcheries vs. growth when released (disc.),
- M'Gonigle, R. H.: Algae, a factor in some hatchery mortalities, 416-422. Meehean, O. Lloyd: Fertilizers in pondfish production: ecological aspects,
- Moore, Emmeline, Greeley, J. R., Greene, C. W., Faigenbaum, H. M., Nevin, F. R., and Townes, H. K.: Problem in trout stream management,
- Mottley, C. McC.: Rainbow trout, origin and relation, 323-327.
- Needham, P. R.: Quantitative studies of stream bottom foods, 238-247. Needham, P. R., and Taft, A. C.: Observations on spawning of steelhead trout, 332-338.

 Nevin, F. R.: joint author: see Moore, Emmeline, et al.

- Nobbs, Percy E.: Measuring the angler's catch (disc.), 51-52. Odell, T. T.: Pomolobus pseudoharengus, life history and ecology, 118-126.

Parnell, I. W.: Fish parasites and their importance, 390-399.

Phillips, Mrs. J. T.: Plankton distribution in Manitou and Brome lakes, Quebec, 461-463.

Prevost, Gustave: Fry and fingerling counting, new method and apparatus, 270-275.

Potassium permanganate in fish culture, a criticism, 304-306. Radebaugh, Gus H., and Agersborg, H. P. Kjerschow: Economic value of treated sewage effluent in wildlife conservation, 443-455.

Reegan, C. C.: Floating bass-brooding equipment, 143-445.

Richardson, L. R.: Mechanical as well as chemical aspects of flooding areas are to be considered (disc.), 367.

Observations on the effects of dams on lakes and streams, 457-458.

Richardson, L. R., and Belknap, G. W.: A method of planting Osmerus mordax Mitchill on a small scale, 432-434. Roach, Lee S., and Wickliff, E. L.: Relationship of aquatic plants to oxygen

supply and their bearing on fish life, 370-376.

Rodd, J. A.: Report of the Committee on Foreign Relations, 20-23.

Sadler, W. O., joint author: see Embody, G. C.

Shillington, K. G.: Selective breeding of speckled trout, 274-275.

Smith, M. W.: Dissolved oxygen content of fertilized waters, 408-415.

Spier, J. D.: Dominating species of aquatic plants in Brome and Manitou lakes, Quebec, 464-468.

Stansby, Maurice E., joint author: see Griffiths, Francis P. Surber, Eugene: Feeding of young bass in circular pools, 141. Surber, Thaddeus: Measuring the angler's catch (disc.), 53.

Taft, A. C., California steelhead experiments, 248-251.

Taft, A. C., joint author: see Needham, P. R. Taylor, B. W., and Lindsay, R. C.: Trout lakes in Gaspé County, Quebec, 424-431.

Terrell, Clyde B.: Copper sulphate to destroy coarse fish (disc.), 279-280. Tester, Albert L., joint author: see Hart, John Lawson.
Tidd, Wilbur M.: Gold fish and carp infested by Lernaea carassii, 176-180.

Townes, H. K., joint author: see Moore, Emmeline, et al.

Van Oosten, John: Value of questionnaires in commercial fisheries regula-tions and surveys, 107-117. Webster, B. O.: Report of the Vice-President of the Division of Fish Cul-

of

ial

d-

ve

ed

ce,

31.

3 ts

of

ture, 28-32.

Werner, W. H. R.: Artificial spawning of speckled trout, use of physio-

logical saline, 346-349.

Werner, W. H. R., joint author: see MacKay, H. H.

White, H. C.: Some facts and theories concerning Atlantic salmon, 360-362.

Spawning period of brook trout, 356-357.

Wickliff, E. L.: Measuring the angler's catch (disc.), 53.

Report of the American Fish Policy Committee, 25-27.

State law regulating handling, transportation and selling of bait (disc.), 96

Survival of fish in water with oxygen content of .15 to 2.00 parts per million (disc.), 376-377.

Wickliff, E. L., joint author: see Roach, Lee S. Wiebe, A. H.: Nocturnal depressions in the dissolved oxygen in ponds, with special reference to excess of coarse vegetation and fertilizers, 181-188.

Wiebe, A. H., Burr, J. C., and Faubion, H. E.: Stream pollution in Texas with special reference to salt water from oil fields, 81-86.